



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,621	01/29/2002	Robert E. Warburton	02-135	3430

7590 09/13/2004

Barry L. Kelmachter  
BACHMAN & LaPOINTE, P.C.  
Suite 1201  
900 Chapel Street  
New Haven, CT 06510-2802

EXAMINER

DUONG, THO V

ART UNIT

PAPER NUMBER

3743

DATE MAILED: 09/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/058,621

Applicant(s)

WARBURTON ET AL.

Examiner

Tho v Duong

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,6-13 and 17-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29 is/are allowed.
- 6) ☒ Claim(s) 1,6-11,17-26,30-32,35 and 37-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 12,13,27,28,33,34 and 36 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Receipt of applicant's amendment filed 6/23/2004 is acknowledged. Claims 1,6-13 and 17-41 are pending. Claims 12,13,27,28,33,34 and 36 have been withdrawn from further consideration.

The indication of allowable subject matter in claims 21,22 and 32 have been withdrawn in view of the new found prior art.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Vidal et al. (US 6,397,581). Vidal discloses (figures 1, 4 and column 1, lines 5-15) heat exchanger panel wall system for use in ram jet engine comprises a first panel (12) and a separated second panel (14); each of the first and second panel being formed from one of a carbon/carbon composite material and carbon/silicon carbide composite material; a fluid containment device (16) sandwiched between the first and second panel; and the fluid containment device (16) not being fastened to either of the first and second panels. As regarding claim 10, each of the first and panels has an interior surface to accommodate the fluid containment device (16). As regarding

Art Unit: 3743

discloses (figure 3) that the panels extending from a point near a leading edge of the wall system to a point near a trailing edge of the wall system. As regarding claims 31 and 38, the fluid containment device is the tubular flow passages (16) placed between a plurality of spacers (protruded part of 14) extending parallel to a longitudinal axis of the wall system.

Note: Since claims 25, 37 and 39 use means plus function format, it gives rise to the interpretation under 35 USC 112, par.6 in light of and consistent with the written description of the invention in the application. The means plus function format in claim 29, does not invoke 35 U.S.C. 112 sixth paragraph because the means for injecting fuel is accompanied by sufficient structure for performing the function. Applicant is reminded that, in order for a claim limitation using the phrase "means for" or "step for" to be interpreted as invoking 35 U.S.C. 112, sixth paragraph, the phrase "means for" or "step for" must not be modified by structure, material or acts for achieving the specified function.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-9, 17-22, 24, 30-31, 35, 37-38 and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vidal et al. in view of Miller et al. (US 6,045,310). Vidal substantially discloses all of applicant's claimed invention as discussed above except for the limitation that the means for fastening the panels comprising bores on panels and composite fastener extending

Art Unit: 3743

through the panels. Miller discloses (figures 2a,2b,7,8 and column 2, lines 9-31) a means for fastening a heat exchanger panel (30) to a substructure wherein the fastening means comprises composite fastener (40), which the applicant hereby has incorporated and claimed the exact Miller's fastener into the instant application, for the purpose of providing a typical bolt structure in a high temperature environment that enable loads to be transmitted to and from the composite body of the fastener in the most effective way while fastening the heat exchanger panel to the substrate. Since Vidal and Miller are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Miller's mounting means as been done by the applicant in Vidal's heat exchanger for the purpose of providing a typical bolt structure in a high temperature environment that enable loads to be transmitted to and from the composite body of the fastener in the most effective way while fastening the heat exchanger panel to the substrate.

Claims 23 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vidal and Miller as applied to claim 17 above, and further in view of Stanley D. Butler (US 3,630,449). Vidal and Miller substantially disclose all of applicant's invention as discussed above except for the limitation of a plurality of heat exchanger panels, which includes an outer panel (12 or 13), aligned along a longitudinal axis of the wall system. Butler discloses (figures 1,10 and column 1, lines 32-40) a wall system for a nozzle and throat section of the rocket engine comprises of a plurality of heat exchanger panels (13) wherein the heat exchanger panels (13) being aligned along a longitudinal axis (along longitudinal edge of each panel) of the wall system for the purpose of improving the accessibility of the nozzle and throat portions of the engine. Since Vidal and Butler are both from the same field of endeavor and/or analogous art, the purpose

Art Unit: 3743

disclosed by Butler would have been recognized in the pertinent art of Vidal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Butler's teaching in Vidal's system to improve the accessibility of the nozzle and throat portions of the engine.

Claims 25,26 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vidal and Miller as applied to claims 17 and 37 above, and further in view of F. G. Denison Jr. (US 2,968,918). Vidal and Miller substantially disclose all of applicant's claimed invention as discussed above except for the limitation of a means for injecting fuel into a space bounded by the wall system. Denison discloses (figure 4) an equivalent fuel injector means (5), which comprises a fuel inlet conduit (42a), a manifold (43) connected to the fluid inlet conduit, and a plurality of injection nozzles (45) for the purpose of injecting fuel into the combustion chamber. Since Vidal and Denison are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ in Schmidt a manifold and a fuel injector means for the purpose of injecting fuel into the combustion chamber.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vidal in view of Wittel (US 4,583,583). Vidal substantially discloses all of applicant's claimed invention as discussed above except for the limitation of a plurality of tubes with arch shaped on panels. Wittel discloses (figures 2 and 4-6)) a heat exchanger system that comprising panels (41) enclosing a cooling passage (90) wherein the flow passage is a plurality of tubes sit in a plurality of arch shaped grooves formed on the panels so that the cooling fluid can dissipate heat from the panels while avoiding any corrosion of the panels due to the direct contact between the cooling

Art Unit: 3743

fluid and the panels. Since Vidal and Wittel are both from the same field of heat exchanger, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Wittel's teaching in Vidal's system for the purpose of dissipating heat from the panels while avoiding any corrosion of the panels due to the direct contact between the cooling fluid and the panels.

*Allowable Subject Matter*

Claim 29 is allowed.

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Vandendriessche (US 5,233,755) discloses a cooling wall of a combustion chamber.

Steffier (US 6,783,824) an actively-cooled fiber reinforced ceramic matrix composite rocket propulsion system.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tho Duong whose telephone number is (703) 305-0768. The examiner can normally be reached on from 9:30-6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet, can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 3743

Any inquiry of a general nature or relating to status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



TD

September 3, 2004



Tho Duong

Patent Examiner. .